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ABSTRACT

The field of international telecommunications, especially that of direct broadcasting by satellite, has attracted increasing attention over the past decade. This aspect of communication technology has also become a part of the larger debate at the United Nations, Unesco, and the International Telecommunication Union concerning issues of access and participation of the Third World countries in the flow of news and information. Conventional wisdom does not seem to be adequate for understanding or coping with technological changes that have occurred in international communications during the last two decades. A theoretical task to comprehend and analyze the significance of satellite communications across national boundaries is an urgent one. Unless communications scholars begin to formulate innovative explanations for problems in international telecommunications, the resultant policies and regulations will be tenuous, tumultuous, and short-lived. The theories of Canadian economist-historian Harold Innis have great potential for communications policy making. His concepts of time and space, monopoly of knowledge, and dimensions of social structure and culture have specific relevance to the direct broadcast satellite, politico-economic, and national sovereignty issues that have been raised by advances in telecommunications. (FL)

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THEORY AND METHODOLOGY DIVISION
(SPECIAL PAPER SESSION)

SEARCH FOR ORDER IN INTERNATIONAL TELECOMMUNICATIONS: THEORETICAL EXPLORATION FOR POLICY-MAKING

by

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Technological inventions were developed and adapted to the conservative tradition of monopolies of communication with consequent disturbances to public opinion and to political organization.

-Harold Innis
Empire of Communications, 1950

The machine tends not to create a new human environment, but also to modify man's very essence. The milieu in which he lives is no longer his. He must adapt himself, as though the world were new, to create a universe for which he was not created....He was created with a certain essential unity, and is fragmented by all the forces of the modern world.

-Jacques Ellul
The Technological Society, 1954

INTRODUCTION

The purpose of this paper is two-fold: 1) to describe the implications of advances in international telecommunications technology; and 2) to explore a theoretical framework which can explain and help us understand those implications.

International telecommunication, during the last decade, has become a part of a larger debate at the UNESCO, UN and the WARC (World Administrative Conference) on issues of access and participation of the Third World in information and news flow. To my knowledge, no one has yet made an attempt to create a strong and powerful theoretical link between the significance of new telecommunication technology and the Third World perspectives in the debate. International communication today no longer conforms solely to the theories of economics or dependency. Nor does it correspond to the utopia of a global village depicting a single world society--although aspects of both are present in scholarly endeavor.

This theoretical task to comprehend and analyze the significance of satellite communications across national boundaries is an urgent one. As evidenced by the debate, the international flow of information and

news, and communication technology which facilitates that flow, have become urgent political concerns. Conventional wisdom does not seem to be adequate for understanding of or coping with technological changes that have occurred during the last two decades. To understand the significance of any technological advance and its impact on a society--social scientists must formulate a theoretical and philosophical framework. Theoretical perspectives, however nascent in view of fast-changing technology, are paramount to sound policy-making and to devising approaches to study the decisive influence of political, social and cultural factors.

Policy, more than ever, must be based on sound theory.[1] It must be predicated upon an understanding of historical changes in, and consequences of, communication technology. Unless communication scholars begin to formulate innovative explanations for problems in international telecommunications technolocy, the resultant policies will be tenuous, tumultuous, and short-lived. In this broadest sense, then, this paper represents the beginning of a theoretical exegesis heretofore lacking in the study of communication technology at the international level. Yet, it is no more than a perspective. I feel that the policy implications that flow from it are both obvious and significant. The paper will begin with a description of applied satellite technology, specifically, the direct broadcast satellite (DBS); this will be followed by an exploration into the potential of communication theory for policy-making.

DBS GROWTH AND POTENTIAL

International telecommunications, especially that of DBS communication, has attracted increasing attention over the past decade. In large part, this stems from the "great promise" telecasting through space holds for all societies in the world as a revolutionary, low-cost, versatile means

of voice, video, data and news transmission. However, not all of the interest relates to new and glamorous uses of communications; rather, there appears to be a growing concern with the ability of the existing common carriers in the orbit and regulatory agencies to assure industry performance will be maximized in a fashion that may deviate development and general welfare of the global mass.[2]

Correctly anticipating the potential of satellite communications, advanced countries--particularly the United States--began to diffuse its scope on an international basis. Various regulatory bodies were organized to oversee issues concerning business, ownership, programming and international cooperation. The U.S. played a vital role in incorporating the INTELSAT (International Commercial Satellite Communications Consortium) by virtue of the Communications Satellite Act and the UN's brainchild, the COMSAT (Communications Satellite Corporation). By the mid-1960's the UNESCO found itself active in the media-supported educational activities between the member countries. The activities continued into this decade with several important projects in India, parts of Africa, Arab states and Latin America.

Inevitably, UNESCO's program[3] in space communications has involved issues of free flow of information through direct broadcast satellite, which turned out to be acrimonious, especially since satellite technology can virtually obliterate barriers at national boundaries. The utilization of satellites for development purposes usually through dissemination of educational, scientific and cultural information has also become a part of UNESCO's priorities. This was reflected in the 1972 General Conference of UNESCO which adopted the Declaration of Guiding Principles on the use of satellite broadcasting for the free flow of information, the spread of education and greater cultural exchange.[4]

Earlier, in 1971, the World Administrative Radio Conference for Space Communications met in Geneva to adopt the definitions for satellite broadcasting. That convention defined the DBS as "a communication service in which signals transmitted or retransmitted by space stations which are intended for direct reception by the general public." This definition was further complemented with a footnote saying: "In the broadcasting satellite service, the term direct reception shall encompass both individual and community reception." Individual reception was seen as "the reception of emissions from a space station in the broadcasting satellite service by simple domestic installations and in particular those possessing small antennas." Community reception was defined as "the reception of emissions from a space station in the broadcasting satellite service by receiving equipment, which in some cases may be complex and have antennas larger than those used for individual reception." Community reception is intended for use either by a group of the general public at one location, or through a distribution system covering a limited area.[5]

The enormous potential for satellite broadcasting via DBS is most clearly seen through the eyes of developing countries not having extensive television broadcast systems. With broadcast satellites, a full-blown national capacity can be established in these areas. Moreover, in countries of wide geographical area, the same satellites may provide links for inter-city point-to-point communication.

DBS PROBLEMS IN THE THIRD WORLD

Before embarking on major projects of telecasting for the less developed countries (LDCs)--in the likeness of India's SITE program--the UN is currently studying the problems apt to be associated with the DBS use--political, economic, social and cultural. The LDC satellite broadcasting systems are likely to be under direct government control.

In addition, the cost of the space segment--even a share of the cost of a regional system--are still high enough to require public financing. The economics of the LDCs cannot even support widespread private ownership of home receivers. Thus, receivers are likely to be supplied by the state to designated communities or institutions, and for specified purposes. For both economic and political reasons, these receivers are likely to be simple installations, capable of receiving only the channels, perhaps the only channel, on which the state broadcasting entity operates.[6] In such social conditions, access to the system and control over the programming will be firmly in the hands of the state and subject to schedule of perceived priorities. In all the developing countries education is close to the top of this priority list; education in a prescribed curriculum, besides its intrinsic value, is often seen as a contributor to inculcate a sense of national identity and national unity.

As such, the educational objectives of these countries are unattainable by conventional methods within an acceptable time period. Direct broadcasting by satellite to schools and homes throughout a particular country holds large promise of filling this gap, especially in important areas of literacy, training in basic agricultural and mechanical skills, and population control. Consequently, the broadcasting satellite systems now closest to realization are primarily educational systems.

Economically (and technically) on the other hand, satellite broadcasting will levy claims on some of the scarcest resources of the LDCs. In particular, the engineering and technical skills needed for design and operation of such systems are likely to be desparately in short supply. Simpler community receiving installations may be suitable for manufacture or assembly in countries in the earlier stages of industrialization. The satellites themselves, however, as well as launch services and complicated transmitting stations will have to be procured abroad at the

expense of precious foreign exchange. Requirements for power supply, maintenance work, and operating personnel in remote, inaccessible parts of the country may distort development priorities. Moreover, many countries have only limited, if any, indigenous program production capability.

SOFTWARE DILEMMA

Consequently, the crucial problem arises: even the software may have to be purchased abroad. In addition, the DBS will carry with it all the sensitive problems of translation and adaptation of educational materials from one language and cultural setting to another. A special problem will be to avoid programming that depicts, even unconsciously, affluent western life-styles which stimulate demand for import of consumer goods. Teachers too, must get special training to participate effectively in education by television--although it may well be that the broadcast satellite system itself can serve the urgent teacher-training needs to be found in most developing countries.

Although there have been promising experiments, educational telecasting through satellites has not yet lived up to its advanced billing. The UNESCO spent several years exploring the feasibility of regional satellites for the Arab States, South America and the sub-Sahara.[7] A communication satellite was first tested in India as a means of reaching a massive segment of people with educational and development material.[8] UNESCO and other agencies helped in launching the project by training technical and production personnel. The Indian government contracted with the United States for the experimental use for one year of an ATS-F satellite (Application Technoloty Satellite) which was originally launched to provide educational programs to isolated Appalachian and Alaskan communities and later repositioned over India.

The planning of this India-U.S. experiment in satellite broadcasting provided clues for the potential this innovative technique offered to the developing nations. On the other hand, in the developed countries with highly evolved terrestrial systems of television broadcasting, satellites are likely to be fitted into the existing network in an auxiliary role at least for the next decade, and will not dominate television broadcasting or fundamentally change in character. In the field of commercial broadcasting, for example, the principal interest in satellites is for cheap networking facilities to replace coaxial or microwave terrestrial links now in use. And the impact of satellite educational broadcasting at an international scale is potentially more significant for the structure and organization of world communications industry itself so as to be more meaningful and constructive in the developing countries.

However, predictions of DBS effectiveness in developing countries should probably be taken with some reservations for now. These considerations suggest that satellite broadcasting is by no means the panacea for the educational and cultural needs of the LDCs. Costs and benefits, besides the program content with associated political and social value overtones, must be carefully evaluated in terms of the conditions and the overall development plans must be taken into consideration.[9]

The patterns of DBS use are numerous. It represents a new activity combining features from at least four different areas: space technology, radio communication, broadcasting and telecommunication activities. While hitherto these four areas have been governed by concepts and rules created independently of, and not necessarily in concordance with, each other, "the very fact of combination had added a new dimension which makes a planned coordinated, cross-disciplinary approach to satellite broadcasting essential."[10]

The UN's current efforts to diffuse direct satellite broadcasting are directed towards the establishment of a system which provides for direct

reception by community receivers.[11] Plans for experiments in the use of DBS and for establishment of such systems on large scale have advanced in many parts of the world. The first experiments, other than the SITE program in India, in the use of this technology and systems are now being planned for telecasting into Brazilian homes.

OWNERSHIP AND CONTROL

Even as the innovations in communications technology have been given as something to cheer about, the criticism leveled against the international operation and regulatory organizations itself is mounting. The flow of communications between and among countries has historically been a source of frustration and resentment for the Third World ever since news agencies began international service early in the nineteenth century. Since the inception of these services, majority of the nations have depended upon western news agencies for much of their information; indeed, in some continents, particularly Africa and parts of Asia, communications between Third World countries on the same continent have had to go through international news agencies such as Agence France Presse, Reuters, Associated Press, Tass, or United Press International.[12] The case is similar with the one-way traffic of radio transmission, films and television programs.

The DBS, however, has created a situation where international communications could possibly overcome that means of control.[13] Direct satellite broadcasting from a transmitter in a country could be received by a community receiver in another country with a relatively inexpensive antenna. We now can foresee the problems which this technology brings. How will nations control the reception of these signals--signals with foreign propagandistic purpose or straight entertainment which competes with local programs? Will they limit the kinds of antenna people can use or will

they jam the signals? Perhaps, the answers will be found in international law or voluntary restrictions; nations have already demonstrated their concern for television control. The paramount issues in the area of satellite communication like the flow of information through satellites and its effects on local culture have called for the attention of the U.N., the Comsat, Intelsat and the ITU (the International Telecommunications Union). But the constructive policies regarding these problems are nowhere in sight.

Presently, to a great degree, the individual nation states continue to set the terms and framework for space communication. International cooperation is essential for solving problems arising out of the DBS. Discussions of direct broadcasting in the above mentioned agencies have confirmed widespread apprehension among many LDCs that the medium may be used to transmit to their people unwanted or offensive broadcasts. Consequently, many states are unwilling to assent to international measures necessary for effective development of the DBS unless assurances against unwanted broadcasts are given.[14]

IMPLICATIONS FOR POLICY-MAKING

Hence, to solve this apprehension, a viable regulatory framework and policy will require a high degree of flexibility, responsiveness and empathy to varied national interests and priorities and economic requirements.

To arrive at formidable policies a deeper understanding of the ultimate impact of DBS upon our world--especially on the kaleidoscopic cultures of the less developed regions, is very essential. Most of the issues for policy-making stem from some indication of trends, possibilities and inplications of satellite communications in the light of more clearly defined aspects. The UN Committee on the Peaceful Uses of Outer Space has had

several working groups for formulating policies. A Soviet proposal for a conventional banning of any direct television broadcast from a satellite to a foreign country, except with permission, has been vigorously opposed by many Third World countries. However, many LDCs--democratic or not--have supported the doctrine of "prior consent" requiring approval of direct broadcast programs.

The debate on DBS concerns two indisputable trends in the international flow: a one-way traffic from the big exporting countries to the rest of the world, and dominance of entertainment material in the flow. Katz, among many others, feels highly dissatisfied over these trends. All this, he says

> "is very far from the dream that television will find a way to express the nation-building hopes of the country or become an important center for indigenous cultural creativity. The programming schedules of television the world over have become homogenized, and the more hours, the more homogenization--not just in small, poor countries but rich as well..."[15]

Katz also blames the importing countries for harboring misconceived expectations of this new medium via satellites.

The nature of news broadcasting via satellites is another implication which has stronger effects in developing countries. Katz calls it the "problem of homogenized news."[16] By that term, Katz means that programming news content is done by people who want others to see the world from their point of view.

Implications surrounding the effects of DBS are more pronounced in the political arena. At the heart of the debate is the realization that communication is power and that control over the mechanisms and the content of a nation's communication system enables vested interests (private or public) to control important aspects of a society's decision-making apparatus as well as the cultural and political symbols that bind a particular society together.[17]

Against this background of national security and a concern over the cultural integrity of states, the prospect of the DBS has raised dramatic and complex political questions for policy-makers.

Some key political, social and cultural implications of the DBS which confront the planners have been outlined. While the DBS may have all the implications and effects one could imagine, the policy makers are faced with the difficulty of understanding them and breaking them into manageable units. Reconstructing these areas into a comprehensible whole is another challenge facing DBS communication planners for formulation of international policies. The growth of DBS applicability requires a certain amount of international understanding, but it represents only a fraction of what is required to encourage and protect the growth of worldwide space communication in the future. Problems of dependency, cultural identity, national integration, political and sociological propaganda, individual privacy, human rights, national sovereignty, the decision-making process, and social policy are among the matters of broad international concern.

How, then, can these issues be understood by communication scholars? What framework can be applied to analyze these issues and formulate workable policies? Let us explore a theoretical framework which can explain and help us understand the issues in direct broadcasting by satellite.

POSSIBLE THEORETICAL FRAMEWORK

In the late 1940's, a Canadian economist-historian, Harold Adams Innis, made an observation which might have appeared enigmatic to his Western colleagues. He wrote: "The future of the West depends on the cultural tenacity of Europe and the extent to which it will refuse to accept dictation from a foreign policy developed in relation to the demands of individuals in North America..."[18] In distinct relation to this observation, and while

juxtaposing it with what he felt the American dominance in communications, Innis warned: "Whatever hope of continued autonomy Canada may have in the future must depend on her success in withstanding American influence and in assisting the development of a third bloc (the present Third World) designed to withstand the pressure of the United States and Russia."[19]

Innis, in The Changing Concepts of Time, voiced the fear that European countries stood directly exposed to American influence and to the threat that "cumulative advantage of size and technological progress" of the U.S. may enforce uniformity and standardization with disastrous implications for the artistic culture of Europe and for Western civilization.[20]

Innis, unfortunately, does not subject Eastern civilizations and the cultures of economically underdeveloped nations to his analysis. His work is indeed limited by time and place; most of his analyses were done in late 1940s and early 1950s. And being a Canadian nationalist, his studies focused primarily on Canadian relations with her mother country Great Britain, and her immediate neighbor, the U.S. His death precluded analysis of the full-fledged medium of communication--television-- and consequently, limited it to television's embryonic period of existence. Irrevocably, major developments in communication technology as witnessed through application of satellites for mass communication purposes and their inherent problems eluded his critical analysis.

Nevertheless, after nearly four decades, most of Innis' observations are now increasingly pertinent to the East-West controversy concerning international communication problems in general, and specifically to the advent of DBS. Strikingly, the basic concepts of Innis and his seminal propositions provide useful notions in examining the DBS debate. I will attempt to elucidate and relate those concepts and propositions of Innis to the issues raised by the contemporary DBS medium of communication. While doing so, I will also consider the works of later scholars like Herbert

Schiller, Brenda Maddox, Jeremy Tunstall, James Carey and several others. Specifically, I will explore the Innis-Satellite technology connection by relating to his concepts of time and space, monopoly of knowledge, dimensions of social structure and culture--with their specific relevance to the DBS politico-economic, national sovereignty and other issues. I might add here that in the characteristic absence of an orderly, systematic argument in the works of Innis, I will rely on his foremost interpretor, James Carey.[21]

TECHNOLOGY AND SOCIAL STRUCTURES

Innis, like Jacques Ellul[22] and Schiller,[23] is by no means a technocrat, a positivist eliciting pragmatic adoration of technology as the neutral tool by which we can create the great and global society of the future in which all mankind's needs supposedly will be met by the inexhaustible resources of technological apparatus. But Innis, like Ellul, is by no means a pessimist either; he sees, though cautiously, major advantages in progressive communication technology and prefers if it excludes its inherent spatial bias. In fact, through his Empire and Communications and The Bias of Communication, Innis presents one of the most scholarly--though not too systematic--arguments that communication technology should be thought of as an integral component of any social structure without which society itself would be quite different in a large number of ways. He substantiates that perspective with these insights: that in the context of ancient Egyptian culture, writing on stone tablets permitted the maintenance of social structures in interior areas, but that the invention of papyrus and the transportation of people in boats was essential for the maintenance of an integrated society extending along the Nile Valley. He also argues that Romans could not have long maintained a large land empire without both written communication and a road system. Similarly, the development and maintenance in both Canada and the U.S. of a democratic

policital system that now spans the entire continent depended in part on the road and the telegraph.

But it was the communication technology used by the elite in a society for imposition of control through space that Innis concerned himself with at length. If technological determinists implied technology is the means of fostering a global village, Innis would not have. Nevertheless, Innis (and his disciple Marshall McLuhan) held a view that of a social historian: the effects of changes in communication technology may be more significant than the transmission of the message itself. Within that context, it can be seen that economic elite of the world--whether the U.S. or the Soviet Union--can increase their span of control through the medium of communication satellite.

Innis felt that American media in the modern times--newspapers and the radio--were inherently space-binding. The flow of American culture into Canada through the U.S. media, while justified under the U.S. doctrines such as freedom of information and of trade , was however, radically problematic for Canadian culture. Similar argument is now seen in Schiller, who thinks that the American "postwar imperial thrust is unblushingly evident" in the contemporary satellite communication. He says:

> "In this entirely new arena of human capability and technical achievement, the ambitious commercial-political objectives of the American decision-making elite have been straightforwardly elaborated. The space communication goals and the structures that have been established to achieve them reveal the mechanics of American power maneuvering for world position in a strategic sector."[24]

Extending Innis in this regard, too, is Maddox. The British journalist observed in 1972 that this American bias for space in its communication system was evident early when

> "The United States...paid for the development of communication satellites and put them into international service in the mid-1960s, but it still has not managed to use satellites for its own domestic needs."[25]

Tunstall, similarly, thinks that American mass media output and dominance has spread to such an extent that no country in the world has escaped its commercial influences.[26] More contemporary criticism is also offered by Carey on a broader level of Western influence through space-biased communication. Terming it "the politics of popular culture," he points out the dominance of the British through the BBC in the Republic of Ireland.[27]

CONCEPTS OF TIME AND SPACE

To put these observations in context, let us examine concepts of time and space in Innis' works. Along with social control, Innis divided communication into two major categories. Time-binding media--the manuscript and human speech--favored closely-knit communities, nurtured human speech and traditional authority. Space-binding media, such as print and electricity, were connected with expansion and control over territory and favored the establishment of commercialism, empire and eventually technocracy.[28] Innis only hoped that the American and Western bias for spacial communication would take into consideration other operating, traditional media in world civilizations. He wrote: "We can do little more than urge that we must be continually alert to the implications of this spacial bias and perhaps hope that consideration of the implications of other media to various civilizations may enable us to see more clearly the bias of our own."[29] He saw that an extended use of space-binding communication and its pervasive influence will eventually create a civilization in which life and flexibility will become exceedingly difficult to maintain. He believed that the impact of a new medium--like the DBS in this instance--will lead to the emergence of a new civilization at the cost of the older, richer one.[30]

In this theoretical context, the emergence of U.S. dominance in satellite

communications can be clearly seen in a characteristic setting of Western civilization. He attempts to show in Empire and Communication that

> "In Western civilization a stable society is dependent on an appreciation of a proper balance between the concepts of space and time. We are concerned with control not only over vast areas of space but also over vast stretches of time. We must appraise civilization in relation to its territory and in relation to its duration. The character of the medium of communication tends to create a bias in civilization favorable to an overemphasis on the time concept or on the space concept and only at rare intervals are the biases offset by the influence of another medium and stability achieved."[31]

The satellite technology, specifically the DBS, dominated by the West provides the modern example of dominance of space-binding communication in Western civilization. This capacity of technology, Innis pointed out (to borrow from Carey), enhanced the capacity of imperial powers to bring satellite areas--meaning their allies--within the orbit of their control. No amount of rhetoric could varnish or reverse the pattern of technological control. But Innis held the last hope: "Only the workmanship of politics and scholarship, the consistent attempt to maintain another counter-culture, offered any viability."[32] As Carey observes, the demise of a culture can only be prevented by a deliberate curtailment of the influence of technics and those institutions in which technics were encased by a strenuous cultivation of the realms of art, ethics and politics.[33] These observations by Innis and on Innis can be identified with the present Third World attempts to resist unrestricted application of the DBS to safeguard their cultures which, to a large extent, are based on oral tradition. The debate at the UNESCO can be seen in relation to what Innis calls workmanship of politics and scholarship and consistent attempt to maintain counter cultures as represented by those in the developing countries. These debates to check the dominance of space-biased communication technology was exactly what Innis hoped for. To quote Carey again: "The bias of technology can only

be controlled by politics, by curtailing the expansionist tendencies of technological societies and by creating avenues of democratic discussion and participation beyond the control of modern technology."[34]

However, Innis was pessimistic about the outcome of such debates to control communication technology. Historical events tended to support his pessimism: the development of radio and television, the influence of Western countries on spectrum allocation and the expansion of communication industries in British colonies which resulted in imperialism. In The Changing Concepts of Time, Innis charged that "vast monopolies of communication occupying entrenched positions involved a continuous, systematic, ruthless destruction of elements of permanence essential to cultural activity."[35] Despite its shortcomings, the present UNESCO debate can be seen as rooted in Innis' belief--belief that the speed and distance of electronic communication enlarges the possible scale of social organization and thereby greatly enhancing the possibility of centralization and imperialism in culture and politics.

CENTRALIZATION AND MONOPOLY OF KNOWLEDGE

I believe this centralization has already occurred in satellite communication--and thereby extending Innis' notion of monopoly of knowledge vested in political control of space orbit. It is evident through the establishment of Soviet Union's own satellite communication system,[36] America's COMSAT and COMSAT-dominated Intelsat. Control over not only hardware but also software is evident.

Knowledge is power; it can be monopolized like any other commodity. According to Carey, there are two interpretations of this notion.[37] In the first, monopoly of knowledge is seen as simply a means of control of factual information; it allows groups to control that information and deny

access to the uninitiated and disconnected. In the second, monopoly of knowledge has a more stringent sense of meaning. It refers to the control of entire systems of thought that determines what is factual, and determines what the standards are for assessing the truth of any elucidation of these facts, and that defines what it is that can be accounted for as knowledge.[38]

The majority views held at the UNESCO debate, as I see them, are built on the second notion of monopoly of knowledge. The Third World nations argue that those that control the satellite technology do also monopolize their approved, sanctioned, official mode of thought, and even the definition of what constitutes the truth. Indeed this thought is persistent in Innis' theme: "Each medium has its significance for the ...type of monopoly of knowledge which will be built and which will destroy the conditions suited to creative thought and be displaced by a new medium with its peculiar type of monopoly of knowledge."[39] In The Bias of Communication, he notes: "We are compelled to recognize the significance of mechanized knowledge as a source of power and its subjection to the demands of force through the instrument of the state."[40] Even worse, Innis observes pertinently, history has shown that technological innovations which result in monopoly of knowledge tend to create "consequent disturbances to public opinion and to political organization."[41]

Schiller equates the monopoly of knowledge to what he calls the mechanics of cultural levelling. The content of programming in the DBS and television relays is seen by Schiller as embedded in the notion of monopoly of knowledge. As a consequence, Schiller observes, in this controlling instrument "content is all that matters, for what it broadcasts may determine, in large measure, the cultural outlook and the social direction of the new nations for generations."[42] Of course, there are numerous studies done by western scholars which reiterate or indicate or subscribe to the existence of such monopoly of knowledge: Tunstall, Varis,[43] Nordenstreng, Read, Wells, and not excluding

Schiller.

Communication technology has widespread physical, structural and cultural implications for a given society. Carrying these dimensions of Innis into the realm of DBS, the present debate which has been voicing precisely the same concerns can be seen as a subsequent historical development. Using evidence from Egypt, Mesopotamia, Greece, Rome and Medieval Europe, Innis documented that the replacement of clay tablets, papyrus, and later the introduction of paper and printing created new forms of monopolies over knowledge and power. True to his observation, the result of applied satellite communications has created control of information by few at the center, while making it more difficult for feedback from people.

Structurally, this electronic revolution has led to the decentralization of communication activities and centralization of authority.[44] Evidently, in international satellite broadcasting, as Schiller and Katz argue, this revolution has narrowed down the cultural variety and will result in homogenized conception of reality among different societies.[45] These political and business powers controlling the satellite communications, Innis would have agreed, have acquired the social power to produce official versions of the world fashioned from values stressing market perishability and political control rather than human needs. As Carey suggested, these sort of developments which intensify spacial-bias, increasingly "transcend all national boundaries, thereby weakening nationalism or at least tending to undercut the parochial limitations of national identification. Further, such media are a potent force in generating a more universal, world-wide culture which is urban, secular, and in Innis' terms, unstable."[46]

In the Western countries, less is said about the socio-cultural implications of the new international vehicles of communication. Only few U.S. theorists have focused on the social implications of communication technology, the bias inherent in this technology, the medium's symbolic power, the role

of dialectics in cultural stability and power.[47] I will illustrate these consequences, or possible implications of this new space-biased DBS technology as evidenced in the debate and described earlier in the paper so as to relate them to various key observations of Innis.

CONTRADICTIONS IN INTERNATIONAL PRICIPLES

National sovereignty has been one of the key issues in the UNESCO debates concerning DBS. Against the background of national security and a concern over the cultural integrity of states, the prospect of the DBS has raised dramatic and complex questions. These questions dealing with the political issues involved in the "governance" of broadcasting from space, are clouded by the contradictory goals and principles set forth in the UN Charter and other international proclamations. The UN Charter, for example, is premised on "non-interference in matters within the domestic jurisdiction of any state." Yet Article 19 of the Universal Declaration of Human Rights proclaims that "everyone has the right to seek, receive, and impart information and ideas throuth the media regardless of the frontiers." The UNESCO's guiding principles on the use of satellite broadcasting on the other hand, take a moderate stand by suggesting that states should take into account the principles of freedom of information to "reach or promote prior agreements concerning DBS to the population of countries other than the country of origin of the transmission." Unfortunately, what is formally proposed in one international proclamation is often disregarded or contradicted in another.

Behind the principles expressed by the UN, and beyond this echo of the nations concerning the implications of the DBS use, lies an essential value: the sovereign rights of states in matters pertaining to communication across national frontiers. Nations, especially those which have been European

colonies, treasure strict sovereignty and regard the use of DBS as "forfeiture of independence"; they perceive themselves to be in an economically and politically dependent position vis-a-vis the relatively few countries which have centralized the technological prowess and possess financial capability to build, launch and maintain such satelittes. A growing number of Third World countries also fear that their countries' dependency on foreign broadcast technology and programming will be intensified if they fail to take steps to protect native time-biased communication. A failure to stem the tide of imported technology will only reinforce the "nightmarish realization" that basic decisions regarding communication policies will continue to be "forfeited to outsiders."[48] The sense of vulnerability perpetuated by unequal access to satellite technology is the most common political theme uniting the advocates of a strong nationalistic approach to the development, control and application of the DBS.

NATIONALISM AND SOVEREIGNTY

This view can draw inspiration from Innis, whose nationalistic stance implied protection of national sovereignty. Describing the power of space-biased communication relating to sovereignty, Innis says:

> "Political boundaries related to the demands of the printing industry disappeared with the new instrument of communication (radio). The spoken language provided a new base for the exploitation of nationalism and a far more effective device for appealing to larger members. Illiteracy was no longer a barrier."[49]

Also, imported software of the DBS penetrates the host cultures in ways that are yet unpredictable. Lack of understanding has generated uneasiness and fear. A UN group meanwhile, summed up thus:

> "We must not speak of men (or nations) free from satellite technology, but of men (or nations) free in relation to it. This requires reality assessment and solutions. Critics have lingered in lamentations and, in some cases, very good theoretical specu-

> lations. Optimists have overlooked reality constraints and foresee marvels of technological dreams. Meanwhile, technical communications developments in the satellite realm advance, in gigantic steps, with their own logic..."[50]

Thus, problems of national sovereignty stemming from dependency, cultural identity, national integration, political and sociological propaganda, individual privacy, human rights, the decision-making process, and social policy are now among the matters of broad international concern. Because of these factors, which are parallel to Innis' concerns, international and national political systems are going through a profound change. Mowlana notes that the influence of communications satellite technology is transforming the traditional views about sovereignty, which has always been expressed in spacial terms, to a new kind of perception which may be called informational sovereignty.[51]

Paradoxically, enormous improvements in communication technology, Innis says, have made understanding difficult.[52] He points to numerous political and economic implications which are highly relevant to and are being discussed in DBS debate. Innis argues that new innovations create political instability; this view can be stretched to the DBS impact on Third World political systems. He equates politics with economics; that the influence of communication (advertising) on the new media and, the "lumpy character of new developments in communications...accentuates instability if not insanity."[53]

In the debate, dependency theorists as well as nationalistic media planners argue that satellite communications will only exacerbate the existing inequalities in international communication flow thereby weakening even further the position of the Third World countries.[54] Moreover, cultural penetration through satellite telecasting takes place in various ways at different stages of media development in poor nations. At the early stage, direct foreign ownership is usual. As the history of early television broadcasting in Latin America, the Middle East, Africa and Asis shows,

British, American or French companies often directly owned or assisted the establishment of a television system. North American transnational companies can be seen jointly as another moving force in world commercial television. In Latin America for example, almost 25 percent of the total broadcasting time is made up of advertising made in estern cities selling cosmetics, detergents and non-essential food items.[55]

Moreover, at a later stage of media development in the Third World, national production often begins to imitate the dominant Anglo-American way of production. The results are usually worse: national versions of globally marketed materials. As soon as the governments become aware of their dependency on American and other foreign material, they try to establish quotas and take other artificial measures to control "unwanted foreign influence."

These economic complications of communication technology are also pointed out by Galbraith: "Modern mass communications, especially the movies and television, insure that populace at large will see the most lavish comparisoning on the bodies. In South America, in the Middle East and in Socialist India...most people are still...poor and unable to afford the goods which advertise wealth."[56]

CULTURAL IMPLICATIONS

Innis also attempts to show that sudden extensions of communication are reflected in cultural disturbances. McLuhan, in his introduction to Innis' Empire and Communications, notes that Innis saw media, old and new, not as mere vertices but as "living vortices of power creating hidden environments that act abrasively and destructively on older forms of culture."[57] This

observation almost sounds like the echo of the present Third World argument concerning the effects of DBS on their older forms of culture. In his chapter on "Industrialism and Cultural Values," Innis implies that constant changes in technology particularly as they effect communication are deterrent to determination of cultural values of a society. "The cultural values of an industrialized society." Innis pertinently pointed out, "are not the cultural values of other societies."[58] Traditional societies rooted in time as opposed to space, when imposed upon by new communication technology, offer a weakening possibility to predict impact of unrestricted DBS telecasting. Innis' observations in this regard can provide a valuable basis for the Third World charge of cultural imperialism.

In direct relation to the cultural segment of the UNESCO debate, Innis had cautioned Canada back in the 1950s:

> "We can only survive by taking persistent action at strategic points against American imperialism in all its attractive guises...(by) attempting constructive efforts to explore the cultural possibilities of various media of communication and to develop them along lines free from commercialism..."59

Let us examine these observations of Innis relating to culture in the context of the DBS issues. Even though international satellite broadcasting is often perceived as one of the "cultural interchange," the reality is that of the marketplace. Most of television programming in international distribution is produced to satisfy audiences as they now exist in the United States, Canada, Australia, Japan and the United Kingdom. Following from their overall pattern is the dominance of entertainment in the international flow of television programs. Hence it is not all surprising to see that at the heart of the debate, there is an evident realization that communication is power and that control over the mechanisms, the content of the DBS communication

system enables vested interests (private or public), to control not only important aspects of a society's decision-making apparatus, but also the cultural symbols that bind a particular society together.[60]

These implications arising out of cross-national telecasting have also aroused contemporary scholarly interest. Writing in defense of the "viability, integrity and values of traditional cultures," Carey attacks the larger states and the dominant class in those states who control the international means of production in communications. He fears that the "older forms of imperialism and colonialism have been supplanted at advance stages of capitalism by cultural imperialism: the use of the...mass media to erode traditional cultures and to incorporate smaller nations into world-wide commercial markets."[61] The importance of cultural survival is thus highlighted:

> "Culture is not merely a structure, a thing; it is a creative process of growth and achievement: a daily struggle that involves a selective recovery of the past in order to endow the present with meaning, significance, purpose and, above all, hope. To keep this process alive and vital among all the members of a community, to promote clear and sustained vision is the great challenge. And the real question is this, does television kill this creative process? The answer at the moment, yes, for it conspires to send it elsewhere. The real issue is the distortion of life by the means of communication: the abstraction of culture from time and place. Television everywhere largely consists of messages from nowhere, aimed at no one and presenting nothing. And yet we gull ourselves into believing we are being entertained and informed..."[62]

In the debate itself most Third World nations regard satellite communication as a step towards more powerful and all persuasive mass media whose content binds individuals to a technocratic order; they

fear this will lead to more intense propaganda and to cultural hegemony by the countries with technological and economic leadership.

The anxieties and fears that have been expressed in the debate with regard to the possibility of unwanted television broadcasts via DBS, do however, recognize the importance of both the medium and the message. On the one hand, there is a greater recognition of the much greater impact of television as compared to such a medium as short-wave radio; on the other hand, there is a concept of certain kinds of content being more acceptable to, compatible with a culture--or unacceptable to, incompatible with the traits of that particular culture--than others. One of the main consequences of DBS would be instantaneously and universally available information. The problem for the developing nations would then be one, not of availability, but of selectivity. This would imply the recognition of the need for new kinds of education for the uneducated so that "people can cope efficiently, imaginatively, and perceptively with information regarding foreign cultures."[63]

PROBLEMS WITH THE VERNACULAR

Language--dialectic dilemma--is also one of the main defenses put forward by the developing nations in the DBS debate. As most international broadcasting also carries with it the inevitable involvement of transmission of foreign languages, this factor may have implications for the evolution or extinction of the vernacular languages. If DBS inherently removes technological obstacles for global communications, in what language will it broadcast? The issue is generally seen from two distinctly different angles; that broadcasting has effects on local cultures and, that language has a constraining influence on international broadcasting.

Dialectics form one of the methods through which Innis traces processes in communication technology developments. Consequently, he was very much conscious of the implications of new forms of communication technology on language and the vernacular. Links between the technological innovations in media and exploitation of foreign languages is clearly seen in Innis' observations based on historical approach:

> "The British Empire...has been exposed to the effects of increasing monopolization based to an important extent on language under the influence of mechanization of the printed word as in the case of the French in Canada, the Dutch in South America, the languages of India and Pakistan, and the attempt to revive the Irish language in Eire."[64]

But the structural changes in communication lead Innis to comprehend the language of change and innovation with what McLuhan calls "sure insight into the processes" at work:

> "Inability to adapt English institutions to new circumstances lost the colonies in the Western hemisphere and imperilled the empire in the East."[65]

Innis' analyses of dialectics and the media can be related to the Third World viewpoints on DBS impact on languages. In Empire and Communication he observes that large-scale mechanization of knowledge is characterized by active creation of monopolies in language not only prevents understanding of other cultures but also hastens appeals to force.[66] He relates commercialism to the creation of monopolies in language and maintains that monopoly of knowledge itself in one way resulted through struggle between language groups.[67] He observes that development of new media through printing, by emphasizing on vernacular, created divisions between states based on language. It, therefore, resulted in the growth of intense regionalism. The press not only "accentuated the importance of English language in relation to other languages, it has also created divisions between classes within English-speaking countries.[68]

In essence, what Innis is attempting to explain is that new communication technology, although he confined himself to printing and radio, had been the cause for division and instability in the world. He observes:

> "The printing industry had been characterized by decentralization and regionalism such as had marked the division of the western world in nationalism and the division and instability incidental to regions within nations. The radio appealed to vast areas...and favored centralization and bureaucracy. A simple individual could appeal at one time to vast numbers of people speaking the same language and indirectly, though with less effect, through interpretors to numbers speaking other languages. Division was drawn along new lines based on language but within language units centralization and coherence became conspicuous. Stability between language units became more evident and instability between language units more dangerous."[69]

For example, this passage provides an excellent basis for a country like India to resist direct broadcasting by satellites without any political restriction. India has 14 major languages, 820 other dialects existing in her multi-structured society. Linguistic controversy over the language of DBS could itself throw the country into a disarray with widespread political and economic repercussions. Notwithstanding, Pakistan's attempts to foster unity and harmony between Urdu and Bengali-speaking groups would also face identical dilemmas.

On a much wider scale, what Innis saw in printing and radio is true with regard to DBS. Contrary to the optimistic prediction that "with the advent of the direct broadcast satellite, the influence on children and adults of one-language (English) TV programs and advertising will be enormous," many small and developing countries prefer to think they are faced with the glaring prospect of linguistic homogenization. One researcher points out: "If the world is thought of as a speech community,

then English and a handful of other languages are competing for leadership in the same way as dialects within a nation."[70] Claiming that small countries like Norway are presently feeling the pressure of this dialectic competition within the country, Haugen points out:

> "An important aspect of modern mass culture is the pressure exerted by the great international languages, especially English. Both sides of the controversy in Norway are aware of the danger that Norwegian culture may be entirely denationalized by this pressure."[71]

The UNESCO debate has witnessed attribution of that pressure on international languages to global broadcasting; others have speculated on worse terms whether world television will lead to the extinction of minority languages.[72] Unfortunately, for most of the Third World countries linguistic diversity sparks off major problems for their language planning and policies. Those countries which are multi-lingual face two major problems: first, the propagation of a national language within the country, and second, the role of languages of wider communication. The problem, then, would be meeting these challenges on a national scale that focuses on either language form or language use or both.

CONCLUSION

What I have attempted in this paper is the juxtaposition of Innis' explanatory power with the current issues in communication technology, the issues and debate that have risen out of it when applied to the international realm. When one studies Innis, it appears as though the DBS and cross-national television debates have roots in Innis' work itself. Canada, of all nations, introduced and applied in 1970 the notion of the "Right to Communicate" within her society and did much to popularize it among the

Third World countries. The emerging concept of the Right to Communicate, with its moral and ethical foundations, exhorts equal access to, and participation of the disadvantaged in, communication processes. Frenchman Jean D'Arcy coined the phrase--the "Right to Communicate": Canada implemented it through statutes. And in the international realm that notion of a right to communicate[73] has given hope for the Third World to rectify the present imbalance in information flow--whether it be through news agencies or the DBS.

The explanatory power of Innis may offer new insight into other problems associated with international telecommunications. The paper has presented a perspective which must be explored further in search for an order in this crucial area of policy-making.

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